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NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY
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OFFICE OF
AIR AND RADIATION

December 3, 2009

CISD-09-18 (LDV, LDT, SVM, ICI)

SUBJECT: Updated Criteria for Manufacturer-Conducted Confirmatory Testing

Dear Manufacturer:

This letter provides manufacturers with updated criteria (cut points) for manufacturer-conducted confirmatory testing of emissions and fuel economy vehicles. This letter supersedes previous cut point criteria provided in EPA guidance letter CCD-05-13, July 28, 2005.

Background

Manufacturers are required to perform confirmatory testing if the vehicle meets any of the five criteria outlined in 40 CFR 86.1835-01(b)(1) and 600.008-08(b)(1). This guidance document updates the criteria for two of the five conditions: High Fuel Economy and Potential Fuel Economy Class Leader. No changes are being made to the other three criteria that were originally established in EPA guidance letter VPCD-99-06 dated April 22, 1999. Enclosure 1 of this letter lists the criteria for all five conditions for your reference purposes.

Policy for Gasoline and Alternative Fueled Vehicles

Manufacturer confirmatory testing is required if the fuel economy value of the city and/or highway test equals or exceeds the criteria included in Enclosure 2 (High Fuel Economy) or Enclosure 3 (Potential Fuel Economy Class Leader). For alternative-fueled vehicles, including E85, M85, propane, and compressed natural gas (CNG) vehicles, the fuel economy test results must first be converted to an equivalent gasoline fuel economy value using the conversion factors provided in Enclosure 4 so that they can be compared with the cut point criteria outlined in Enclosures 2 and 3.

Policy for Hybrid and Diesel Vehicles

Enclosure 2 (High Fuel Economy) contains ETW-based cut points for conventional gasoline vehicles. Since there is not enough data to determine appropriate ETW-based cut points for hybrid and diesel vehicles, we request that manufacturers use good engineering judgment to determine the need for manufacturer confirmatory testing for those vehicles. Normally EPA would expect manufacturers to perform city or highway confirmatory tests for these vehicles when the fuel economy of the vehicle is higher than expected due to test-to-test variability or other reasons (e.g. when fuel economy is up by 3% or more from expected values). Enclosure 4

provides additional information about this process.

Enclosure 3 (Potential Fuel Economy Class Leader) contains cut points for hybrid vehicles in the compact, midsize cars, standard pickup trucks and SUV classes, only. Enclosure 3 does not contain cut points for diesel-fueled vehicles. For hybrid and diesel vehicles in vehicle classes which are not shown in Enclosure 3, manufacturers should use the highest unadjusted city/highway mpg values listed on www.fueleconomy.gov for the two most recent model years. If there are no comparable vehicles in a vehicle class, manufacturers should use good engineering judgment to determine the need for manufacturer-conducted confirmatory test. Enclosure 4 provides additional information about this process.

We expect that these changes will reduce manufacturers' confirmatory testing burden, with no negative impacts on vehicle compliance. If you have any questions about this letter, please contact your certification team representative.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. Simon', with a stylized flourish at the end.

Karl J. Simon, Director
Compliance & Innovative Strategies Division
Office of Transportation and Air Quality

Enclosures

Enclosure 1 to CISC-09-18
Criteria for Confirmatory Test Selection

1. **Failure or Replacement for Failed Vehicle.** The vehicle configuration has previously failed an emission standard or the vehicle is a replacement for a failed vehicle. Both city and highway tests should be run for vehicles selected under this criterion, regardless of the test procedure on which the emission standard failed. An evaporative, refueling, SFTP, cold temperature NMHC/CO test should be conducted (in addition to the city and highway tests) if the vehicle failed any of those emission standards.
2. **High Emission Levels.** Any certification level (test level adjusted by the deterioration factor, or test level with aged components installed) that is more than 90% of the applicable standard. If more than one test was performed for any procedure, only the last test is considered for this criterion. Both city and highway tests should be run for vehicles selected under this criterion, regardless of the test procedure on which the emission certification level was high. An evaporative, refueling, SFTP, cold temperature NMHC/CO test should be conducted (in addition to the city and highway tests) if the certification level was above 90% of the emission standard for that procedure.
3. **High Fuel Economy.** The fuel economy value of the city and/or highway test as measured in accordance with the procedures in 40 CFR Part 600 equals or exceeds the value contained in the cut point table in Enclosure 2. If more than one test was conducted, harmonically average all applicable tests prior to comparing the data to the cut point table. If the tested vehicle operates on a fuel other than gasoline, convert the fuel economy test results to equivalent gasoline fuel economy values using the conversion factors provided in Enclosure 4 and then compare the calculated value with the gasoline cut point tables.
4. **Potential Gas Guzzler.** The combined (unadjusted) fuel economy value as measured in accordance with the procedures in 40 CFR Part 600 is between 22.3 and 22.8 mpg. If more than one test was conducted, harmonically average the fuel economy values prior to calculating the combined fuel economy. Both city and highway tests must be run for vehicles selected under this criterion.
5. **Potential Fuel Economy Leader.** The fuel economy value as measured in accordance with the procedures in 40 CFR Part 600 equals or exceeds the value contained in the cut point table in Enclosure 3. If more than one test was conducted, harmonically average all applicable tests prior to comparing the data to the cut point table. If the tested vehicle operates on a fuel other than gasoline, convert the fuel economy test results to an equivalent gasoline fuel economy value using the conversion factors provided in Enclosure 4 and then compare the calculated value with the gasoline cut point tables. Test only the procedures identified using this criterion.

Enclosure 2 to CISC-09-18
Unadjusted MPG Cut Points for “High Fuel Economy” for Gasoline-Fueled Vehicles
(based on latest available data from 2007 to 2009 model year vehicles)

ETW	City-Cars	Hwy-Cars	City-Trucks	Hwy-Trucks
2000	48.1	64.5	36.3	50.1
2125	46.2	62.5	35.4	49.1
2250	44.4	60.7	34.5	48.1
2375	42.6	58.8	33.7	47.1
2500	41.0	57.1	32.8	46.2
2625	39.3	55.3	32.0	45.2
2750	37.8	53.7	31.3	44.3
2875	36.3	52.0	30.5	43.4
3000	34.9	50.5	29.8	42.5
3125	33.5	49.0	29.0	41.6
3250	32.2	47.5	28.3	40.8
3375	30.9	46.0	27.6	40.0
3500	29.7	44.7	27.0	39.1
3625	28.6	43.3	26.3	38.4
3750	27.4	42.0	25.7	37.6
3875	26.4	40.7	25.0	36.8
4000	25.3	39.5	24.4	36.1
4250	23.4	37.2	23.2	34.6
4500	21.6	35.0	22.1	33.2
4750	19.9	32.9	21.1	31.9
5000	18.4	30.9	20.0	30.6
5250	17.0	29.1	19.1	29.3
5500	15.7	27.4	18.2	28.2
6000	13.3	24.2	16.4	25.9
6500	11.4	21.4	14.9	23.9
7000	9.7	18.9	13.5	22.0

Enclosure 3 to CISD-09-18
Cut Points for “Potential Fuel Economy Class Leaders” for Gasoline-Fueled Vehicles
based on all available data for 2010 model year vehicles as of September 11, 2009

Vehicle Class (non-hybrids)	City-Gasoline (unadjusted mpg)	Hwy-Gasoline (unadjusted mpg)
Two-Seater Cars	45	58
Minicompact Cars	37	52
Subcompact Cars	38	52
Compact Cars	37	52
Midsize Cars	36	50
Large Cars	28	45
Small Station Wagons	37	50
Midsize Station Wagons	28	42
Small Pickup Trucks	28	38
Standard Pickup Trucks	20	31
Minivans	28	40
Vans	19	28
Sport Utility Vehicles	30	45

Vehicle Class (hybrid vehicles)	City-Gasoline	Hwy-Gasoline
Compact Cars	55	65
Midsize Cars	72	70
Standard Pickup Trucks	27	31
Sport Utility Vehicles	46	43

Enclosure 4 to CISC-09-18
Guidance/Conversion Factors for Hybrid and Non-Gasoline Vehicles

- Hybrid: Manufacturers should use good engineering judgment to determine the need for manufacturer-conducted confirmatory testing for hybrid vehicles on a case-by-case basis at the time the manufacturer submits the corresponding Test Request to EPA's "Verify" data base. Normally EPA would expect manufacturers to perform city or highway confirmatory tests of hybrid vehicles when the fuel economy of the vehicle is higher than expected due to test-to-test variability or other reasons (e.g. when fuel economy is up by 3% or more from expected values). For class leaders, manufacturers should use the hybrid table provided in Enclosure 3 for compact, midsize cars, standard pickup trucks and SUVs. For other classes of vehicles, manufacturers should use the highest unadjusted city/highway mpg values listed on www.fueleconomy.gov for the two most recent model years. If there are no comparable hybrid vehicles in a vehicle class, manufacturers should use good engineering judgment to determine the need for manufacturer-conducted confirmatory testing.¹
- Diesel: Manufacturers should use the same approach as outlined above for hybrid vehicles, except that manufacturers should check www.fueleconomy.gov to determine the highest city and highway fuel economy values for diesel vehicles listed in each vehicle class outlined in Enclosure 3.
- E85: Multiply the E85 fuel economy values by a conversion factor of 1.384 which is based on current fuel property data to determine the equivalent gasoline fuel economy.
- M85: Multiply the M85 fuel economy values by a conversion factor of 1.734 which is based on current fuel property data to determine the equivalent gasoline fuel economy.
- Propane: Multiply the propane fuel economy values by a conversion factor of 1.377 which is the conversion factor found in 49 CFR Part 538.8 to determine the equivalent gasoline fuel economy.
- CNG: Use the equation found in 40 CFR Part 600.113-93 to determine the equivalent gasoline fuel economy.

¹ At a minimum, manufacturer confirmatory testing should normally be performed on the vehicle configuration with the highest city mpg and the vehicle configuration with the highest highway mpg.